



## **PREVENTION MANUAL**

### **FIRE EXTINGUISHING SYSTEMS**

#### **405.8 FIRE PUMP INSTALLATION LOCATIONS**

**EFFECTIVE: OCTOBER 2000**

## **SCOPE**

This policy establishes the requirements for locating fire pumps inside buildings (pump rooms), detached pump houses, or exterior installations.

## **PURPOSE**

This policy provides acceptable installation requirements which address the following items: vandalism, fire exposure, environmental exposure; and pump access for firefighting personnel.

Design professionals should familiarize themselves with this policy as it also addresses acceptable fire pump installation locations, and when followed, may reduce plan review time.

## **BACKGROUND**

This policy is based on the requirements found in National Fire Protection Association 20, Standard for the Installation of Centrifugal Fire Pumps, City of Fresno Fire Department experience with fire pump installations and sound fire protection engineering practices and judgments.

## **REQUIREMENTS**

1. Fire pumps shall be located in an enclosed pump room within a building, or a detached/attached pump house directly adjacent to the building(s) served by the pump. The pump enclosure may be of any type of construction permitted for the protected premises as found in the currently adopted California Building Code. A separate building permit is required for pump room.

**Exception:** While not recommended due to long-term maintenance issues, Underwriters Laboratory (UL)/Factory Mutual (FM) fire pumps and

controllers listed for exterior use may be installed subject to the following restrictions:

- I. The installation shall be located a minimum of 50 feet from all buildings, exterior storage, or other fire exposures.
  - II. A metal canopy shall be provided over the pump and controller which extends a minimum of five feet beyond all portions of the equipment, with a minimum clear height of seven feet above grade.
  - III. A concrete pad extending to the perimeter of the canopy shall be provided.
  - IV. Bollard protection shall be provided where the installation is subject to routine vehicular traffic.
  - V. The canopy shall be fenced to a minimum height of 6 feet and be provided with a minimum 4 foot wide gate with Fire/Police padlock installed in series with the owner's padlock.
  - VI. All pressure-sensing lines and other related pipe two inches or less in diameter shall be insulated or provided with UL/FM fire protection listed heat tape.
  - VII. Aboveground steel pipe shall be galvanized or primed and painted.
2. The pump house or room shall have a minimum ceiling height of seven feet. The room shall be sized to provide a minimum of three feet of working space adjacent to the fire pump, fire pump controller, and all associated equipment. Exiting shall comply with the currently adopted California Building Code. A minimum door width of 4 feet or double doors which together measure 4 feet or wider may be installed
  3. The pump house or room must be separated from the protected building by a minimum of one-hour, fire-resistance rated construction. A two-hour fire resistance rated separation is required for high-rise building installation.
  4. Fire pumps may be located in a dedicated mechanical or electrical room provided the one-hour fire separation is provided and the room is maintained free of all combustibles with appropriate signage installed.

5. A fire pump room shall have a door leading directly to the exterior of the building, or be readily accessible through a fire-resistance rated corridor or passageway. Retrofit fire pump installations may use alternate, equivalent designs which are approved by the Fire Marshal (or designee).
6. Fire pump rooms or houses shall have approved fire sprinkler protection.
7. Approved lighting and fixed emergency lighting shall be provided.
8. Fire pump rooms or house floors shall be sloped to a floor drain piped to the building's exterior.
9. Means shall be provided to maintain a minimum temperature of 40 degrees Fahrenheit.
10. Means shall be provided for ventilation of the pump room or building to inhibit condensation.

**Note:**

For diesel fire pumps, consult NFPA 20 for ventilation and combustion air requirements.

11. An approved lock box with keys to access to the fire pump shall be provided at an approved location.
12. Means shall be provided within the pump room to test fire pump pressure switch settings by a valve with a pressure gauge installed on the discharge side of the fire pump, after the check valve piped and drained.
13. No storage is permitted in fire pump rooms or pump houses.
14. A minimum 2A:10:BC portable fire extinguisher for each electric fire pump, or a minimum 4A:40:BC extinguisher for each diesel fire pump installation shall be maintained within the room or house.